

LISTING OF CLAIMS

1. (Previously Presented) A portrait image processing method comprising the steps of:
extracting a portrait image from an original image including a person and a background;
compositing the extracted portrait image and a background image prepared in advance to create a composite image;
detecting a boundary of the person and the background from the original image;
determining a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the detected boundary; and
applying correction processing to a boundary part which is judged not to be a true contour of the person, for concealing the boundary part, in the created composite image.
2. (Original) The portrait image processing method according to claim 1,
wherein said correction processing is image processing for overwriting another image on the boundary part which is judged not to be the true contour of the person.
3. (Original) The portrait image processing method according to claim 1,
wherein said correction processing is image processing for shifting the portrait image such that the boundary part, which is judged not to be the true contour of the person, is outside a frame of the composite image.
4. (Previously Presented) A portrait image processing apparatus comprising:
a portrait image extracting device which extracts a portrait image from an original image including a person and a background;
a background image recording device which stores a background image to be a background of a portrait image;

an image compositing device which composites the extracted portrait image and the background image read out from said background image recording device to create a composite image;

a boundary detecting device which detects a boundary of the person and the background from the original image;

a judging device which determines a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the detected boundary; and

an image correcting device which applies correction processing to a boundary part which is judged not to be a true contour of the person, for concealing the boundary part, in the created composite image.

5. (Original) The portrait image processing apparatus according to claim 4,
wherein said image correcting device performs image processing for overwriting another image on the boundary part which is judged not to be the true contour of the person.
6. (Original) The portrait image processing apparatus according to claim 4,
wherein said image correcting device performs image processing for shifting the portrait image such that the boundary part, which is judged not to be the true contour of the person, is outside a frame of the composite image.
7. (Previously Presented) A portrait image processing method, said method comprising:
extracting a portrait image from an original image including a person and a background;
compositing the extracted portrait image with a background image prepared in advance,
to create a composite image;
detecting a boundary of the person in the original image;
identifying, in the detected boundary, a boundary part representing a contour of the person with low certainty; and
applying correction processing to the boundary part, for concealing the boundary part in the created composite image.

8. (Previously Presented) The portrait image processing method according to claim 7, wherein said correction processing is image processing for overwriting the boundary part with another image.
9. (Previously Presented) The portrait image processing method according to claim 7, wherein said correction processing is image processing for shifting the portrait image such that the boundary part is outside a frame of the composite image.
10. (Previously Presented) The portrait image processing method according to claim 1, wherein said background is arbitrary.
11. (Previously Presented) The portrait image processing method according to claim 1, wherein said extracting step extracts facial parts from the original image, the facial parts including at least one of eyes, nose and mouth.
12. (Previously Presented) The portrait image processing method according to claim 1, wherein said step of detecting a boundary uses an average positional relationship between a position of a facial part and a boundary of a person and a background, to detect the boundary.
13. (Previously Presented) The portrait image processing method according to claim 1, wherein said extracting step
 - extracts a skin color in the original image,
 - sequentially applies area extension to connected areas, from a point of a skin color area,
 - extracts a face area based on a shape of a face, and
 - extracts a hair area above the face area, and/or a neck and chest area below the face area,to extract the portrait image.

14. (Previously Presented) The portrait image processing method according to claim 1, wherein said determining step determines whether a boundary part of the detected boundary is a boundary part with high certainty as a contour of the person, and/or whether or a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person.

15. (Previously Presented) The portrait image processing method according to claim 14, wherein a boundary part with low certainty is one of

a boundary part where a length between coordinate points on the boundary is partially larger than a decided value, due to unevenness of the boundary,

a boundary part which is out of a range of a reference contour line collected from contours of a large number of people, and

a boundary part for which a shape of the boundary part is different from a shape of a reference contour.

16. (Previously Presented) The portrait image processing apparatus according to claim 4, wherein said background is arbitrary.

17. (Previously Presented) The portrait image processing apparatus according to claim 4, wherein said portrait image extracting device extracts facial parts from the original image, the facial parts including at least one of eyes, nose and mouth.

18. (Previously Presented) The portrait image processing apparatus according to claim 4, wherein said boundary detecting device uses an average positional relationship between a position of a facial part and a boundary of a person and a background, to detect the boundary.

19. (Previously Presented) The portrait image processing apparatus according to claim 4, wherein said judging device determines whether a boundary part of the detected boundary is a boundary part with high certainty as a contour of the person, and/or whether or a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person.

20. (Previously Presented) The portrait image processing apparatus according to claim 19, wherein a boundary part with low certainty is one of

a boundary part where a length between coordinate points on the boundary is partially larger than a decided value, due to unevenness of the boundary,

a boundary part which is out of a range of a reference contour line collected from contours of a large number of people, and

a boundary part for which a shape of the boundary part is different from a shape of a reference contour.

21. (Previously Presented) The portrait image processing method according to claim 1, wherein said extracting step is performed for extracting facial parts.

22. (Previously Presented) A portrait image processing method comprising the steps of:
extracting a portrait image from an original image including a person and a background;
compositing the extracted portrait image and a background image prepared in advance to create a composite image;

detecting a boundary of the person and the background from the original image;

judging whether or not the detected boundary is a true contour of the person for each part of the boundary; and

applying correction processing to a boundary part which is judged not to be a true contour of the person, for concealing the boundary part, in the created composite image,

wherein said judging step determines whether a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person, wherein a boundary part with low certainty corresponds to

a boundary part with a shape different from a shape of a reference contour, or

a boundary part where a length between coordinate points on the boundary is partially larger than a decided value due to unevenness of the boundary, or

a boundary part which is out of a range of a reference contour line.

23. (Previously Presented) The portrait image processing apparatus according to claim 4, wherein said portrait image extracting device extracts facial parts.

24. (Previously Presented) A portrait image processing apparatus comprising:

- a portrait image extracting device which extracts a portrait image from an original image including a person and a background;

- a background image recording device which stores a background image to be a background of a portrait image;

- an image compositing device which composites the extracted portrait image and the background image read out from said background image recording device to create a composite image;

- a boundary detecting device which detects a boundary of the person and the background from the original image;

- a judging device which judges whether or not the detected boundary is a true contour of the person for each part of the boundary; and

- an image correcting device which applies correction processing to a boundary part which is judged not to be a true contour of the person, for concealing the boundary part, in the created composite image,

- wherein said judging device determines whether a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person, wherein a boundary part with low certainty corresponds to

 - a boundary part with a shape different from a shape of a reference contour, or

 - a boundary part where a length between coordinate points on the boundary is partially larger than a decided value due to unevenness of the boundary, or

 - a boundary part which is out of a range of a reference contour line.

25. (Previously Presented) The portrait image processing method according to claim 7, wherein said extracting step is performed for extracting facial parts.

26. (Previously Presented) A portrait image processing method, said method comprising:
extracting a portrait image from an original image including a person and a background;
compositing the extracted portrait image with a background image prepared in advance,
to create a composite image;
detecting a boundary of the person in the original image;
identifying, in the detected boundary, a boundary part representing a contour of the
person with low certainty; and
applying correction processing to the boundary part for concealing the boundary part in
the created composite image,
wherein a boundary part representing a contour of the person with low certainty
corresponds to
a boundary part with a shape different from a shape of a reference contour, or
a boundary part where a length between coordinate points on the boundary is partially
larger than a decided value due to unevenness of the boundary, or
a boundary part which is out of a range of a reference contour line.
27. (Previously Presented) The portrait image processing method according to claim 1,
wherein said step of applying correction processing is performed only for a boundary part
representing a contour of the person with low certainty.
28. (Previously Presented) The portrait image processing apparatus according to claim 4,
wherein said image correcting device performs correction processing only for a boundary part
representing a contour of the person with low certainty.